GLM Regression (Q5L6)

30% (6/20)

✗ **1. Poisson distribution is specified by**

- (A) 1 parameter
- (B) 2 parameters
- (C) 3 parameters
- (D) Poisson distribution does not have parameters
- (E) I do not know

✗ **2. The type of dependent variable in Poisson Regression is**

- (A) Integer
- (B) Count
- (C) Ratio
- (D) Interval
- (E) I do not know
- (F) Binary

✗ **3. Overdispersion in Poisson Regression occurs when**

- (A) var(Y|X)>var(Y)
- (B) var(Y|X)>mean(Y|X)
- (C) Variance is decreasing
- (D) I do not know

✓ **4. The model of Poisson Regression is**

- (A) ln(lambda)=e^(xb)
- (B) ln(y)=e^(xb)
- (C) ln(y)=e^(xb)/(1+e^(xb))
- (D) ln(lambda)=e^(xb)/(1+e^(xb))
- (E) I do not know

✓ 5. We can estimate Poisson Regression in R using function

- A lm()
- B glm()
- C flm()
- D poisson()
- E I do not know

✗ 6. Which one of these is the measure for goodness of fit for Poisson Regression?(if any)

- A Ordinal R^2
- B Chi-square
- C I do not know
- D There are not measure for it
- E Pseudo R^2

✓ 7. Which one of these is the correct interpretation of the coefficient of Poisson Regression?

- A For a 1-unit increase in X, we expect a b1 unit increase in Y.
- B For a 1-unit increase in X, we expect b1 percentage increase in Y.
- C For a 1-percentage increase in X, we expect b1 percentage increase in Y.
- D For a 1-percentage increase in X, we expect b1 unit increase in Y.
- E I do not know

✗ 8. Count data is continuous

- A Yes
- B No
- C I do not know

✓ 9. The logistic model is estimated by way of

- A Ordinary least squares
- B Maximum likelihood estimation
- C Negative binomial distribution
- D I do not know

✗ **10. As a result of estimation of coefficients**

- A We do not have the formula, an iterative algorithm must be used
- B The explicit formula of coefficients exists
- C I do not know
- D We can obtain different values for coefficients

✗ **11. In Poisson regression...**

- A The asymptotic distribution of the maximum likelihood estimates is multivariate normal.
- B The distribution of the maximum likelihood estimates is multivariate normal.
- C The asymptotic distribution of the maximum likelihood estimates is multivariate Poisson distribution.
- D I do not know

✗ **12. Pseudo R-Squared Measures are calculated based on (if any)**

- A The likelihood function
- B Row residuals
- C Deviance
- D Chi-squared value
- E I do not know

✓ **13. The formula for the raw residual is**

- A The difference between the actual response and the estimated value from the model
- B The squared difference between the actual response and the estimated value from the model
- C The difference between the actual response and the estimated value from the model by dividing by the standard deviation
- D I do not know

✗ **14. Which of these is NOT the type of residuals**

- A Deviance Residual
- B Pearson Residual
- C Raw Residual
- D Poisson Residual
- E I do not know

✗ 15. In the case of intercept-only model

(A) The mean of the dependent variable equals the exponential value of intercept

(B) The mean of the dependent variable equals the intercept

(C) The mean of the dependent variable equals 0

(D) I do not know

✗ 16. ln(lambda) = 0.6 - 0.2* female [lamda = the average number of articles] Note: e^(-0.2)=0.78

(A) One unit increase in female brings a 0.2 decrease in ln(lambda).

(B) Being female decreases the average number of articles by 0.78 percent

(C) Being female decreases the average number of articles by 22%

(D) I do not know

✗ 17. While running the Poisson Regression we will have never faced with the value of lambda

(A) 0

(B) 1

(C) 2

(D) I do not know

✗ 18. Why does not quasi-Poisson model have AIC?

(A) Quasi-Poisson is used quasi-likelihood instead of log-likelihood estimates.

(B) Quasi-Poisson does not use iterative estimation

(C) I do not know

✗ 19. Why Poisson regression is called log-linear?

(A) Because we use a log link to estimate the logarithm of the average value of the dependent variable

(B) Because we use a log values of independent variable

(C) Because we use a log value of an independent variable is transformed to linear

(D) I do not know

✓ 20. Formulate the Null hypothesis for chi-squared and deviance test.

(A) The distance between actual and predicted values is insignificant

(B) The distance between actual and predicted values is 0

(C) There is a significant difference between actual and predicted values.

(D) I do not know